

Prevention of Significant Deterioration

Major & Minor Source Permitting

Increment Analyses

Air Forum Meeting
Tuesday, October 3, 2006



Missouri
Department of
Natural Resources

Transition Period

- During the Transition Period, the State of Missouri Has Agreed to Evaluate Compliance with the Prevention of Significant Deterioration Increment Standards Based Upon the Air Quality Control Regions Contained within Section 107 of the Clean Air Act
- Baseline Dates Will Be Based Upon the Date of the First Complete PSD Permit Application within Each Air Quality Control Region on a Pollutant by Pollutant Basis

Major Source Transition Procedures

- Class II Increment Analysis
 - *Increment Inventory Development*
- Class I Increment Analysis
 - *Will Apply to All Sources within 300 Kilometers of Mingo National Wildlife Refuge and Hercules Glades*
 - *Increment Inventory Development*

Class II Increment Analysis

- Preliminary Impact Assessment
 - *Evaluate the Impact from the Proposed Source or Modification*
 - *Determine if Additional Analysis is Necessary*
 - *If Additional Analysis is Necessary, Preliminary Results Will Be Used to Define the Area for Which the Increment Inventory Will Be Developed*
- Full Impact Analysis
 - *Assessment of the Radius of Impact from the New Source or Modification*
 - *Assessment of the Cumulative Impact from the New Source or Modification and Existing Sources*

Model Input Data for Prevention of Significant Deterioration Increment Compliance Determinations

- Proposed New or Modified Source (PSD)
 - *Emission Estimates Are Based Upon Continuous Operation at the Maximum Allowable Emission Limit or Federally Enforceable Permit Limit*
- Nearby Background Sources (Major, Minor and *De Minimis* Sources)
 - *Emission Estimates Are Based Upon the Most Recent 2-year Average Actual Emission Estimates for Any Piece of Equipment, Emission Increase or Other Modification that Was Permitted After the Establishment of the Minor Source Baseline Date*
 - *If the 2-year Average Actual Emissions Are Not Available or Are “Unidentifiable”, Potential Emission Estimates from the Permit Application Are Obtained*

Increment Inventory Development

- Determine Which Pollutants Are of Concern
- Determine Who Has Received A Permit Since the Establishment of the Baseline Date That Could Contribute to Increment Expansion or Consumption
 - *Transition Date 1977 for PM and SO₂*
 - *Transition Date 1988 for NO_x*
- Review Each Permit That Has Been Issued to Determine Which Emission Points Must Be Included in the Emission Inventory
- Request Emission Inventory Information on a Point by Point Basis from the Emission Inventory Unit for the Previous 2-Year Period
 - *Form 1.0 Geophysical Data (UTM Coordinates)*
 - *Form 2.0 Stack Information, Control Efficiencies, Maximum Design Rates, Emission Factors*
 - *Form 2.7 Haul Road Fugitive Emissions Worksheet*
 - *Form 2.8 Storage Pile Worksheet*
- Locate Each Emission Point on the EIQ That Was Identified During the Permit Review and Calculate the 2-Year Average Actual Emissions on a Point by Point Basis

Class I Area Impact Analyses

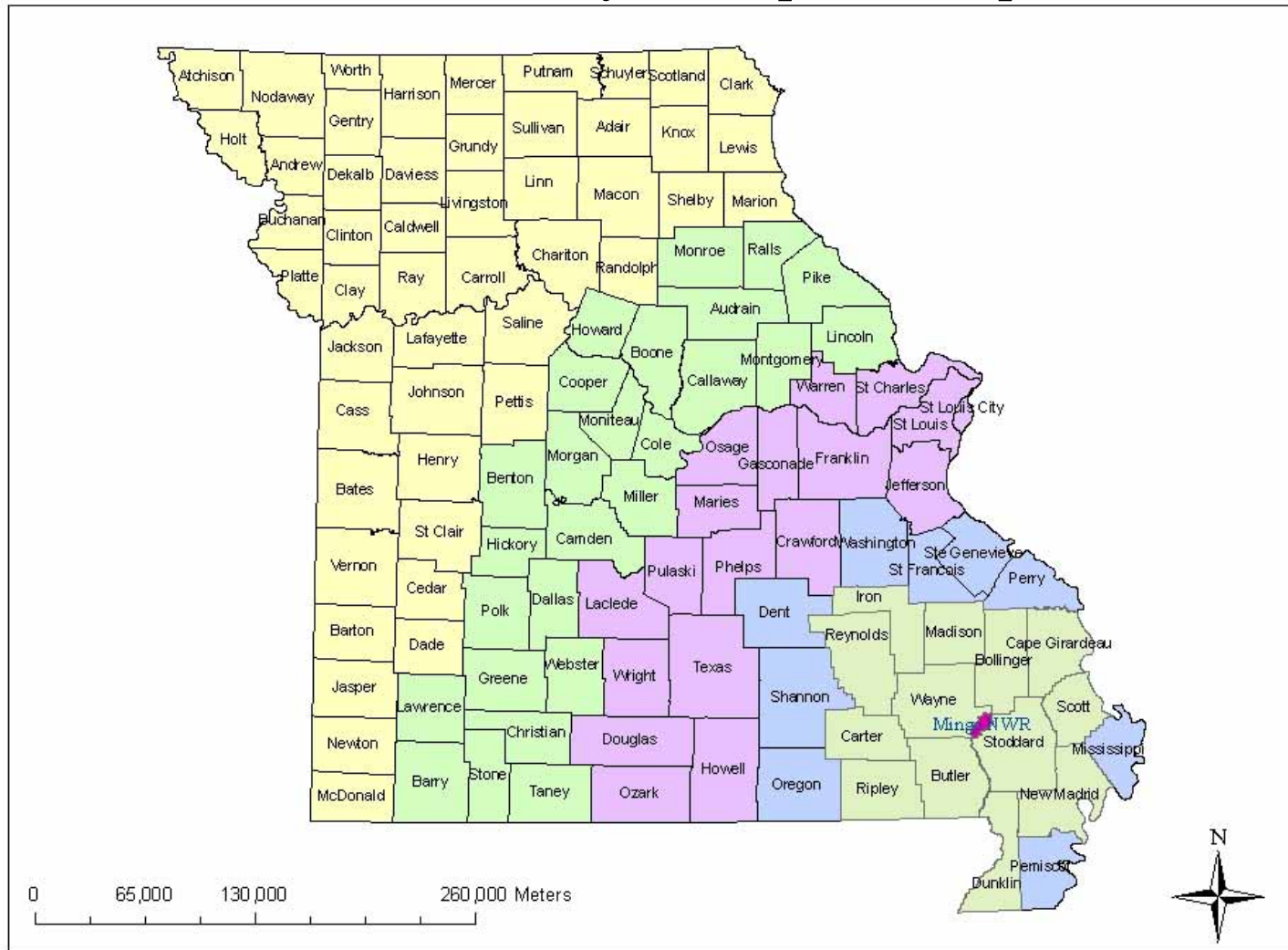
- Based Upon the Recommendation of the FLM, Applicants Will Be Required to Perform One of Two Impact Analyses:
 - Calpuff Screening Analysis
 - *Sources Expected to Have a Minimal Impact on the Class I Area Based Upon Preliminary Information Provided by the Applicant,*
 - *Far-field Sources Located at Large Distances from Class I Area, That Are Expected to Have a Minimal Impact on the Class I Area*
 - Refined Calpuff Analysis
 - *Preliminary Impact Assessment*
 - *Evaluate the Impact from the Proposed Source or Modification*
 - *Determine if Additional Analysis is Necessary*
 - *If Additional Analysis is Necessary, Will Help Define the Level of Detail That Will Be Necessary to Determine the Potential Impact w/Class I Area*
 - *Full Impact Analysis*
 - *Assessment of the Impact from the New Source or Modification*
 - *Assessment of Cumulative Impact of Existing Sources*

Model Input Data for Prevention of Significant Deterioration Increment Compliance Determinations

- Proposed New or Modified Source (PSD)
 - *Emission Estimates Are Based Upon Continuous Operation at the Maximum Allowable Emission Limit or Federally Enforceable Permit Limit*
- Nearby Background Sources (Major, Minor and *De Minimis* Sources)
 - *Emission Estimates Will Be Determined Using the Same Procedures Outlined for the Class II Areas*
 - *Type of Permit Included Will Be Distance Dependent*
 - *Within 50-kilometers of the Class I Area All Permits Issued Since the Baseline Date Will Be Included*
 - *From 50-kilometers to 100-kilometers All Major and Minor Source Permits Since the Baseline Date Will Be Included*
 - *From 100-kilometers to 200-kilometers All Major Source Permits Since the Baseline Date Will Be Included*
 - *From 200-kilometers to 300-kilometers Large Emitters @ the Request of the Federal Land Manager Will Be Included*

Class I Area

Increment Inventory Development Proposal



Legend

Mingo Wildlife Refuge
 Counties < 50-kilometers
 Counties > 50-kilometers and < 100-kilometers
 Counties > 100-kilometers and < 200-kilometers
 Counties > 200-kilometers and < 300-kilometers

Minor Source Transition Procedures

- Preliminary Impact Assessment
 - *Evaluate the Impact from the Proposed Source or Modification*
 - *Determine if Additional Analysis is Necessary*
 - *If Additional Analysis is Necessary, Preliminary Results Will Be Used to Define the Area and Type of Increment Analysis that Will Be Performed*
- Full Impact Analysis
 - *Assessment of the Radius of Impact from the New Source or Modification*
 - *If the Preliminary Impact Assessment Indicates Impacts w/50-kilometers of a Major Source an Assessment of the Cumulative Impact from the New Source of Modification and Existing Sources*
 - *If the Preliminary Impact Assessment Indicates No Impact w/50-kilometers of a Major Source an Assessment of the Impact from the New Source of Modification Must Be Completed and Below the Increment Standards Outlined in 10 CSR 6.060 11 (A) Table 1*

PSD Projects and Area of Effect



Post Cleanup Procedures

- Inventory Will Be Limited to within 50-kilometers of the Newly Established Baseline Areas
 - Areas Will Be Defined According to Township/Section/Range
 - Any Section that is Intersected by the $1 \mu\text{g}/\text{m}^3$ Isopleth Will Be Included in the Baseline Area
 - Inventory Will Extend 50-kilometers Beyond the Furthest Extent of the Baseline Area
- Any Minor or Major Source Permit that Has a Significant Impact within a Baseline Area Will Be Required to Perform a Cumulative Increment Analysis
- Minor Source Permits that Do Not Have a Significant Impact within a Baseline Area Will Not Be Required to Perform an Increment Analysis
- Major Source Permits Will Be Required to Perform an Increment Analysis If Predicted Impacts Exceed the Significance Levels

Next Steps

- Development of Protocol Document for Class I and II Area Assessments
 - *Document Will Outline Evaluation that Will Be Conducted in Support of Redesignation Requests*
 - *Specific Modeling Procedures Will Be Developed Based Upon Input from the FLM and EPA Region VII*
- Department's Air Pollution Control Program May Have to Request Site Specific Information from Major Sources Who Have Submitted a Prevention of Significant Deterioration Permit